

**Refurbishment Validation Report  
Ledbury Estate  
(Bromyard House, Peterchurch House, Sarnsfield House and  
Skenfrith House)**

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# Refurbishment Options Appraisal Ledbury Estate

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# Refurbishment Options Appraisal

## Ledbury Estate

### 1 INSTRUCTIONS

- 1.1 We have been instructed by Abigail Buckingham of Southwark Council to prepare a validation report of the refurbishment works to the four tower blocks at Ledbury Estate (individually known as Bromyard House, Peterchurch House, Sarnsfield House and Skenfrith House). This report combines, in an 'overarching' report, the proposals of the 'Pilot Investigation and Strengthening Study', dated 24 October 2019, by Arup and the 'Elemental Order of Cost Estimate' dated 25 November 2019, prepared by calfordseaden. Reference is also made to the 'Refurbishment Options Appraisal' report prepared by calfordseaden dated 22 May 2018 as presented to the Residents Project Group.
- 1.2 This report has been prepared by calfordseaden LLP solely for the use of Southwark Council and their professional advisors. No representation or warranty (expressed or implied) is given as to the accuracy, completeness or reasonableness of the report to any other party, that rely on the report and its contents entirely at their own risk. calfordseaden shall have no liability whatsoever to any other parties for any inaccuracy in, omission from or use of the report, or relating to any decision based on the report. calfordseaden shall have no liability for any consequence arising from failure to act upon any specific reasonable advice contained within the report.

# Refurbishment Options Appraisal

## Ledbury Estate

### 2 **BACKGROUND**

- 2.1 A 'Refurbishment Options Appraisal', for the tower blocks at the Ledbury Estate prepared by calfordseaden and dated 22 May 2018, was presented to the Ledbury Residents Project Group. A ballot was held to identify which of the four options, described within the report, would be the preferred option. The result of the ballot confirmed that Southwark Council should adopt Option 3 which includes the following works:
- Structural reinforcement works to include all stripping out and reinstatement of affected areas including floors, ceilings, sanitaryware, mechanical and electrical installations, fixtures and fittings etc.
  - Permanent fire stopping.
  - Making good cracks / gaps between external wall panels and intermediate cross-wall panels.
  - Replacement Heating System
  - Communal Satellite TV System and Broadband
  - Renewal of all service pipes, waterproofing to kitchens/WC/ bathroom floors, renewal of existing soil stacks and renewal of communal cold water tanks.
  - Improvements to ventilation to stairways and landings where cold bridging, condensation and ingress of rainwater causing trip/slip hazards.
  - Renew existing lifts.
  - Provide improved insulation to the flats and communal areas.
  - Repair/renew key building components such as roofs and windows.
  - Improve lighting to stairways and communal areas.
  - Improve water pressure to upper floors (booster pumps).
- 2.2 More recently Arup have prepared the 'Pilot Investigation and Strengthening Study', dated 24 October 2019, on the resistance of the tower blocks to disproportionate collapse. The report sets out the proposed structural repair works at Ledbury Estate following the investigations works that have been carried out at Bromyard House. We have not attached a copy of this report as it is assumed the reader has access to it.
- 2.3 At a meeting on 4 November 2019 Southwark Council instructed calfordseaden to provide budget costs for the structural repairs identified by Arup, including the works described in Option 3 (item 2.1 above) of the calfordseaden 'Refurbishment Options Appraisal' dated 22 May 2018 (See Appendix A).
- 2.4 This instruction also requested that calfordseaden review the practicalities of completing the works and the impact the structural repair works would have on the living conditions within each of the flats. The conclusions of this request are included within this report.

### 3 **COST AND PROGRAMME**

#### 3.1 **Cost**

3.1.1 Attached to this report in Appendix A is the revised budget costs for the structural works and the works agreed in the calfordseaden Refurbishment Options Appraisal, listed in item 2.1 of this report.

3.1.2 In brief the budget to complete these works is approximately £85 million. The preliminary costs (ie site containers, contractors staff etc) have been calculated on the timescales set out in the programme, see item 3.2 of this report.

3.1.3 The main changes from the Options Appraisal Option 3 Budget Cost (£32,590,720 dated May 2018) are as follows:

<b>Item</b>	<b>New Allowance (Added to revised budget)</b>	<b>Original Allowance (Omitted from revised budget as no longer required)</b>
1	Carefully remove and dispose existing external cladding	<ul style="list-style-type: none"> <li>Steel straps fixed to cross-wall including corrosion protection.</li> </ul>
2	Demolish and reconstruct existing communal stair and lift core	<ul style="list-style-type: none"> <li>Steel straps fixed to the top and bottom surfaces of each slab including corrosion protection.</li> </ul>
3	New lifts	<ul style="list-style-type: none"> <li>Steel angle brackets anchored into external wall panels and cross and flank walls</li> </ul>
4	Temporary propping of existing residential blocks during structural improvement works	<ul style="list-style-type: none"> <li>Steel angle brackets anchored into slab to the top and bottom</li> </ul>
5	Construct new exposed structural steel frame on roof (galvanised and painted)	<ul style="list-style-type: none"> <li>External cladding wall ties</li> </ul>
6	Construct new suspended steel frame, picking up floors 8-14	<ul style="list-style-type: none"> <li>Cement and sand screed on concrete floor slabs</li> </ul>
7	Cross walls floors Ground-4 <sup>th</sup> floors (strengthening)	
8	Diamond cut holes through existing floors to facilitate steel frame strengthening works.	
9	Strengthening works to encase existing shear wall	
10	Install reinforced concrete screed	
11	Basement excavation of mass fill	
12	Reinforced concrete foundation 1.5m thick	
13	Install new ground floor slab (beam and block)	
14	New external cladding (allowance for insulated panellised system)	

#### 3.2 **Programme**

3.2.1 Attached to this report in Appendix B is an indicative programme prepared by calfordseaden. The programme makes allowance for the works described in both the Arup 'Pilot investigation and strengthening study' and the calfordseaden 'Refurbishment Options Appraisal'.

3.2.2 The programme is based on two phases of work, where Phase 1 includes all of the works necessary at Bromyard House, and Phase 2 is the remaining three blocks running simultaneously (ie Peterchurch House, Sarnsfield House and Skenfrith House). The programme assumes that Phase 2 works will follow 6 months after completion of Bromyard House to make sufficient allowance for decanting the remaining blocks.

3.2.3 With the above phasing of the works in mind we have calculated a total programme length of 440 working weeks (circa 8.5 years). Bromyard House (Phase 1) estimated to take circa 189 weeks/3.5 years with the remaining three blocks taking circa 252 weeks/5 years.

#### 4 **PHYSICAL EFFECT ON THE PROPERTIES**

4.1 On review of the Arup 'Pilot investigation and strengthening study', calfordseaden have considered how these works will affect the properties. This has been demonstrated on the drawings provided in Appendix C of this document, and for each of the property types we have provided an existing plan, and a proposed plan.

#### 4.2 **London Plan**

4.2.1 Calfordseaden have reviewed the London Plan (which came into effect in April 2018 and supersedes the London Housing Design Guide), with specific consideration to the room sizes and overall flat areas. The following table shows the effect on the floor areas for the flat sizes:

Property Size	1 bed	2 bed	3 bed
	All figures are given as gross Internal floor area (sq.m)		
Existing Area	56.8	70	82.1
Proposed Area	56.4	64	80.6
Required Area	50	61	70

4.2.2 In addition to the total flat areas we have also considered the individual room sizes. The following relates to corridors:

Property Size	1 bed		2 bed		3 bed	
	Proposed Width	Required Width	Proposed Width	Required Width	Proposed Width	Required Width
Corridor Width	900mm	900mm	728mm	900mm	900mm	900mm
Minimum width of corridor, where approach to a 775mm door is a right angles to direction of travel	N/A				980mm	1050mm

4.2.3 Living, dining and kitchen space are more complicated in their calculation as follows:

Property Size	1 bed		2 bed		3 bed	
	Proposed	Required	Proposed	Required	Proposed	Required
Combined room size	29 sq m	23 sq m	27 sq m	25 sq m	29 sq m	27 sq m
Minimum width of sitting room	3.6m	2.8m	3.4m	2.8m	3.6m	3.2m
Separate kitchen and lounge/dining room	N/A				Provided	Required
Wheelchair turning space available in lounge/dining area	Provided	Required	Provided	Required	Provided	Required
Entrance level Living, dining and kitchen	Provided	Required	Provided	Required	Provided	Required

Windows no higher than 800mm above finished floor level in living room	Provided	Required	Provided	Required	Provided	Required
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#### 4.2.4 Bedrooms need to meet the following requirements:

Property Size	1 bed		2 bed		3 bed	
	Proposed Area	Required Area	Proposed Area	Required Area	Proposed Area	Required Area
Minimum Area of a Single Bedroom	NA	NA	9.5 sq m	8 sq m	9.9 sq m	8 sq m
Minimum Area of a Double Bedroom	10.9 sq m	12 sq m	12 sq m	12 sq m	13.1 sq m	12 sq m
Minimum width of a double/twin bedroom	2.6m	2.75m	2.4m	2.75m	2.6m	2.75m

#### 4.2.5 Minimum storage requirements are as follows:

Property Size	1 bed		2 bed		3 bed	
	Area Available	Required Area	Area Available	Required Area	Area Available	Required Area
Minimum storage	30m <sup>2</sup>	50m <sup>2</sup>	30m <sup>2</sup>	61 m <sup>2</sup>	30m <sup>2</sup>	74m <sup>2</sup>

4.2.6 Floor to ceiling height for new build developments is required to be 2.5 metres. Currently, the floor to ceiling heights at Bromyard House are on average 2.4m. Due to the proposed increase in the thickness of the screed, we anticipate this will be reduced to 2.25m. Further reduction to the floor to ceiling height in the flats will be required for the lighting, providing a total floor to ceiling height of 2.2 meters, but this could be mitigated with the use of mini trunking instead of a false ceiling.

4.2.7 Although some of the requirements of the London Plan are not achieved, compliance with the plan is not mandatory for existing buildings. However we have referred to this document as a benchmark for compliance with modern living standards.

### 4.3 Building Regulations

#### 4.3.1 calfordseaden have reviewed the Building Regulations Approved Documents as follows:

Approved Document	Area of Work covered by document	Design Issues
A	Structure	No anticipated concerns to meet current standards
B	Fire Safety	No anticipated concerns to meet current standards
C	Site preparation and resistance to contaminants and moisture	Current soil samples have not identified any issues requiring further review
D	Toxic substances	Current soil samples have not identified any issues requiring further review
E	Resistance to Sound	No anticipated concerns to meet current standards

F	Ventilation	No anticipated concerns to meet current standards
G	Sanitation, hot water safety and water efficiency	No anticipated concerns to meet current standards
H	Drainage and waste disposal	No anticipated concerns to meet current standards
J	Combustible Appliances	Not applicable
K	Protection from falling, collision and impact	No anticipated concerns to meet current standards
L	Conservation of fuel and power	No anticipated concerns to meet current standards
M	Access to and use of buildings	No anticipated concerns to meet current standards
P	Electrical Safety	No anticipated concerns to meet current standards
Q	Security in dwellings	No anticipated concerns to meet current standards
R	High speed electronic communications networks	No anticipated concerns to meet current standards

#### 4.4 Planning

4.4.1 Southwark Council planning department have advised that a planning application for the refurbishment of the Ledbury Estate will be considered in relation to design standards applicable to new build design standards. This therefore means that considerations will not only need to be given to the proposed external cladding and windows, but also to meeting the requirements of the London Plan.

4.4.2 There will therefore need to be an ongoing dialogue with the Planning department throughout the refurbishment design phase to minimise issues with the application once the final design is completed.

#### 4.5 Kitchens & Bathrooms

4.5.1 As kitchen and bathroom areas are not specifically discussed in the London Plan or the Building Regulations we have not discussed the effect these works will have on them in the above sections. The drawings provided in Appendix C of this report however confirm the following areas:

Property Size	1 bed		2 bed		3 bed	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Kitchen	10.2 m <sup>2</sup>	10.2 m <sup>2</sup>	10.2 m <sup>2</sup>	9.4 m <sup>2</sup>	10.2 m <sup>2</sup>	10.2 m <sup>2</sup>
Bathroom	4.3m <sup>2</sup>	4.3 m <sup>2</sup>	4.3 m <sup>2</sup>	3.8 m <sup>2</sup>	4.3 m <sup>2</sup>	4.3 m <sup>2</sup>

4.5.2 The kitchen floor area of only the 2 bed flats has been reduced, thus affecting the storage capacity available in the room. However we anticipate that with careful design the storage capacity will not need to be affected as the space currently taken by the riser cupboard can be redesigned to be adopted as kitchen storage.

4.5.3 Bathroom areas, as with kitchen areas, remain largely the same, but again the area of the bathroom in the 2 bed room flats will be reduced. Some reduction may also need to be made to size of the other bathrooms as the door width into the lounge has been compromised by the widening of the sheer wall. We have however established that by removing the dividing wall between the existing w.c and bathroom, a standard 1700mm bath can still be installed in this room with a standard w.c and wash hand basin.



## 5 **PRACTICALITIES OF COMPLETING THE WORKS**

5.1 While preparing the costs and programme, we have considered the practicalities of completing each task as this is necessary to effectively calculate the time required and associated costs. The main aspects of the Arup report that we have reviewed in detail due to their complexity include:

- Demolition and rebuild of the communal core
- Access to the external walls and roof
- Structural propping of all floors. Note hydraulic props are likely to be required at a frequency of one each square metre. This will clearly have a significant impact on working space.
- Foundation excavation and casting new foundation
- Steel beam, hanger and column installation (including associated opening up work)
- Screed replacement
- External cladding replacement
- Install new roof trusses
- Sheer Wall strengthening (including associated opening up work)
- Safety of the existing buildings, including adjacent buildings and their occupiers.

5.2 Arup have advised that all of the works described in the 'Pilot investigation and strengthening study' have previously been carried out on other projects. They went on to confirm however, that not all of the works have been carried out to one property at the same time. Furthermore final detailed design will be required to design out all of the potential issues. calfordseaden consider that sufficient allowance has been made in the budget costs to cover this.

5.3 Proposals have been considered in consultation with Engie, one of Southwark Council's Partnering Contractors, and it is anticipated that insurance for these specialist works will be able to be obtained, albeit such discussions are currently on going. In order to obtain confirmed costs, detail is required of the proposals which will not be known until the detailed design stage. The premium is likely to be above the normally expected rate, calfordseaden have therefore made allowance within the preliminary costs and anticipate that sufficient allowance has been made to cover these costs.

## **APPENDIX A**

## **APPENDIX B**

## **APPENDIX C**